



UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/591,888	06/09/2000	Anand G. Dabak	TI-29324	4728

7590 04/02/2004
Ronald O Neerings Esq
Texas Instruments Incorporated
P O Box 655474 MS 3999
Dallas, TX 75265

EXAMINER

RYMAN, DANIEL J

ART UNIT	PAPER NUMBER
----------	--------------

2665

DATE MAILED: 04/02/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No. 09/591,888	Applicant(s) DABAK, ANAND G.	
	Examiner Daniel J. Ryman	Art Unit 2665	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 24 February 2004.
- 2a) ☒ This action is FINAL. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-56 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-34 and 47-56 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☒ Claim(s) 35-46 are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Response to Arguments

1. Applicant's arguments filed 2/24/2004 have been fully considered but they are not persuasive. On pages 16-17 of the Response, Applicant argues, with respect to claims 1-9 and 20-22, that there is no suggestion to combine Applicant's admitted prior art with the teachings of Minn since Applicant's admitted prior art is directed to transmitting a preamble where Minn is directed to encoding data for transmitting after communications are established. Examiner, respectfully, disagrees with Applicant's assertion that the combination is not obvious. Examiner submits that both Applicant's admitted prior art and Minn are directed to transmitting signals between a mobile terminal and a base station. As such, Examiner asserts that one of ordinary skill in the art would have been motivated to combine the teachings of Minn which are directed to communicating signals between a base station and a mobile station with Applicant's admitted prior art which is also directed to communicating signals between a base station and a mobile station.

2. On pages 17-18 of the Response, Applicant argues that Examiner's proposed combination fails to teach all of the claimed limitations since Minn fails to disclose a "spread code arranged as a symbol of the selected code". Examiner, respectfully, disagrees. Minn discloses that the spread spectrum coding is a combination of a long code and short code where the long code is much longer than the repetition period of the short code (N). Minn also discloses that the two codes are generated at the same rate (R_c) (col. 4, lines 7-10) and that the two codes are XORed together (col. 2, line 46 and col. 4, line 7). Thus, in order for the two codes to be combined in an XOR, where the long code is much longer than the repetition period of the short

Art Unit: 2665

code, the short code will be repeated multiple times to equal the length of the long code. The final result will be a spread code which has a length equal to the length of the long code (see Spec. page 4, lines 19-27 for motivation for using a preamble the length of the long code). Given the above arguments, Examiner maintains that Minn teaches a spread code arranged as a symbol of the selected code.

3. In response to applicant's argument on page 19 that Minn does not teach or suggest the same advantages as Applicant, the fact that applicant has recognized another advantage which would flow naturally from following the suggestion of the prior art cannot be the basis for patentability when the differences would otherwise be obvious. See *Ex parte Obiaya*, 227 USPQ 58, 60 (Bd. Pat. App. & Inter. 1985).

4. On pages 19-20, Applicant argues that the proposed combination will be inoperable for the intended purpose since Minn teaches transmitting a data sequence and the claimed invention discloses transmitting a preamble composed of all ones. Examiner, respectfully, disagrees. Examiner asserts that one of ordinary skill in the art would recognize that although the spreading techniques for a preamble and a data sequence are the same, the information derived from the received signal is different for a preamble and a data sequence. Namely, the preamble is used to determine a mobile unit using the user-specific code, while a transmitted data sequence is used to determine an unknown data sequence. In order to determine the unknown user-specific code of the preamble, the encoded data sequence should be known. If the data sequence is not known, then there will be two unknown sequences in the received signal and the receiver will be unable to distinguish between the two unknown sequences. As such, a preamble will modulate a known data sequence, such as a sequence of all ones. However, once the user-sequence is known, the

Art Unit: 2665

mobile will transmit an unknown data sequence in order to relay the information in the communication session. Thus, Examiner maintains that the combination is operable.

5. Examiner maintains the rejections of claims 1-9 and 20-22 in view of the arguments presented above.

6. On page 20-21, Applicant presents arguments, with respect to claims 10-11, 13-15, and 17-19, which are similar to arguments presented regarding claims 1-10 and 20-22, namely that the references are not combinable and that the cited art does not disclose the advantages of the present invention. Using reasoning similar to that presented above, Examiner maintains that the references can be combined and that the cited art does not have to disclose the advantages of the present invention.

7. Applicant also argues on pages 20-21 that the combination would fail in the intended purpose; however, Applicant fails to present any rationale as to why the combination would fail in the intended purpose. Without any specific reasoning to support Applicant's assertion, Examiner is not persuaded that the combination would fail. Thus, Examiner maintains that the combination is proper.

8. On pages 21-22, Applicant reiterates, with respect to claims 12 and 23-24, all of the foregoing arguments with respect to claims 1-22. In view of the rebuttal of all of the foregoing arguments, Examiner maintains that the combination is proper and that the combination includes all of the limitations of the claims as outlined in the rejection below.

9. In view of the previous arguments, Examiner maintains the rejection of claims 1-24. Examiner urges Applicant to add further limitations to the claims in order to distinguish the claims from the prior art.

Election/Restrictions

10. Newly submitted claims 35-46 are directed to an invention that is independent or distinct from the invention originally claimed for the following reasons: Claims 35-41 refer to a second embodiment of the despreading circuitry and claims 35 and 42-46 refer to a third embodiment of the despreading circuitry where the second and third embodiments are distinct from the first embodiment of the despreading circuitry seen in claims 11-19 and 30-34 (see Response: page 22 lines 2-4 and lines 15-26).

Since applicant has received an action on the merits for the originally presented invention, this invention has been constructively elected by original presentation for prosecution on the merits. Accordingly, claims 35-46 are withdrawn from consideration as being directed to a non-elected invention. See 37 CFR 1.142(b) and MPEP § 821.03.

Claim Rejections - 35 USC § 112

11. The following is a quotation of the first paragraph of 35 U.S.C. 112:

The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

12. Claims 47-56 are rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the written description requirement. The claim(s) contains subject matter which was not described in the specification in such a way as to reasonably convey to one skilled in the relevant art that the inventor(s), at the time the application was filed, had possession of the claimed invention. Claims 47-56 are new matter. Claim 47 discloses correlating the entire received preamble with a preamble created (spread through repetition of the second number of signals) at

the receiver using a code. The specification consistently discloses that the receiver despreads the received preamble before correlation with a code.

Claim Rejections - 35 USC § 103

13. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

14. Claims 1-9, 20-22, and 25-29 are rejected under 35 U.S.C. 103(a) as being unpatentable over Applicant's admitted prior art in view of Minn et al (USPN 6,088,347).

15. Regarding claims 1 and 20, Applicant admits as prior art a method of operating a wireless communications unit to request a connection with a base station and a unit for performing the method (page 2, line 12-page 4, line 5), comprising the steps of and means for: receiving, from the base station, a signal indicating at least one time slot within which a preamble may be transmitted by the wireless communications unit (page 2, line 12-page 4, line 5); selecting one of a plurality of orthogonal codes for the preamble (page 2, line 12-page 4, line 5); generating a spread code using the selected orthogonal code (page 2, line 12-page 4, line 5); and transmitting, to the base station, a preamble signal corresponding to the spread code (page 2, line 12-page 4, line 5). Applicant does not admit as prior art that the spread code is arranged as a symbol of the selected code, repeated a selected number of repetitions. Minn teaches, in a wireless communication system, having the spread code (user specific code) be a symbol (Walsh code) repeated a selected number of repetitions since this is part of the CDMA IS-95 standard (col. 1, line 42-48; col. 2, lines 53-64; and col. 4, lines 3-19). It would have been obvious to one of

Art Unit: 2665

ordinary skill in the art at the time of the invention to have the spread code be arranged as a symbol of the selected code, repeated a selected number of repetitions, since this is part of the CDMA IS-95 standard.

16. Regarding claims 2 and 21, referring to claims 1 and 20, Applicant's admitted prior art in view of Minn discloses after generating the spread code, multiplying the spread code by scrambling code associated with the base station (cell-specific code PN) (Minn: col. 4, lines 3-19).

17. Regarding claim 3, referring to claim 2, Applicant's admitted prior art in view of Minn discloses that the spread code has a length corresponding to length of the scrambling code (PN sequence = R_c and the Walsh code rate = R_c) (Minn: col. 4, lines 3-19).

18. Regarding claim 4, referring to claim 3, Applicant's admitted prior art in view of Minn discloses that the plurality of orthogonal codes corresponds to a set of Walsh Hadamard codes (Minn: col. 4, line 3-60).

19. Regarding claims 5 and 6, referring to claim 4, Applicant's admitted prior art in view of Minn does not expressly disclose that the set of Walsh Hadamard codes consists of the set of Walsh Hadamard codes having a length of sixteen; wherein the generating step repeats a symbol of the Walsh Hadamard code 256 times or 240 times; and wherein the length of the scrambling code is 4096 chips or 3840 chips, respectively. Applicant's admitted prior art in view of Minn does disclose that the Hadamard codes have a certain length (Minn: col. 4, lines 3-60), that the scrambling code has a certain length (Minn: col. 4, lines 3-19), and that the chip rate of the scrambling code and the Walsh codes are equal (Minn: col. 4, lines 3-19). It is generally considered to be within the ordinary skill in the art to adjust, vary, select, or optimize the

Art Unit: 2665

numerical parameters or values of any system absent a showing of criticality in a particular recited value. The burden of showing criticality is on applicant. In re Mason, 87 F.2d 370, 32 USPQ 242 (CCPA 1937); Marconi Wireless Telegraph Co. v. U.S., 320 U.S. 1, 57 USPQ 471 (1943); In re Schneider, 148 F.2d 108, 65 USPQ 129 (CCPA 1945); In re Aller, 220 F.2d 454, 105 USPQ 233 (CCPA 1055); In re Saether, 492 F.2d 849, 181 USPQ 36 (CCPA 1974); In re Antonie, 559 F.2d 618, 195 USPQ 6 (CCPA 1977); In re Boesch, 617 F.2d 272, 205 USPQ 215 (CCPA 1980). Since Applicant's admitted prior art in view of Minn discloses that the Hadamard codes have a certain length, that the scrambling code has a certain length, and that the chip rate of the scrambling code and the Walsh codes are equal, it would have been obvious to one of ordinary skill in the art at the time of the invention to use any length for the Hadamard codes, including sixteen, to use any length for the scrambling code, including 4096 and 3840, and to repeat the Hadamard code a number of times such that the Hadamard code and the spreading code are equal (here, 256 times or 240 times).

20. Regarding claims 7 and 22, referring to claims 1 and 20, Applicant's admitted prior art in view of Minn discloses that the plurality of orthogonal codes corresponds to a set of Walsh Hadamard codes (Minn: col. 4, line 3-60).

21. Regarding claim 8, referring to claim 1, Applicant's admitted prior art in view of Minn discloses that the selecting step comprises executing a pseudo-random selection algorithm (Applicant: page 2, line 12-page 4, line 5).

22. Regarding claim 9, referring to claim 1, Applicant's admitted prior art in view of Minn discloses that the receiving step receives a signal indicating a plurality of time slots within which the preamble may be transmitted by the wireless communications unit (Applicant: page 2, line

Art Unit: 2665

12-page 4, line 5); and further comprising: selecting one of the plurality of time slots for transmission of the preamble (Applicant: page 2, line 12-page 4, line 5).

23. Regarding claim 25, Applicant admits as prior art a method of generating a preamble, comprising the steps of: selecting a first code from a plurality of orthogonal codes (page 2, line 12-page 4, line 5). Applicant does not admit as prior art repeating the first code a plurality of times to produce a spread code having a predetermined length and multiplying the spread code by a second code having the predetermined length. Minn teaches, in a wireless communication system, having the spread code (user specific code) be a symbol (Walsh code) repeated a selected number of repetitions since this is part of the CDMA IS-95 standard (col. 1, line 42-48; col. 2, lines 53-64; and col. 4, lines 3-19). It would have been obvious to one of ordinary skill in the art at the time of the invention to repeat the first code a plurality of times to produce a spread code having a predetermined length, since this is part of the CDMA IS-95 standard. Minn also discloses multiplying the spread code by a second code having the predetermined length (cell-specific code PN) since this is part of the CDMA IS-95 standard (Minn: col. 4, lines 3-19). It would have been obvious to one of ordinary skill in the art at the time of the invention to multiply the spread code by a second code having the predetermined length since this is part of the CDMA IS-95 standard.

24. Regarding claim 26, referring to claim 25, Applicant's admitted prior art in view of Minn discloses that the orthogonal codes are Walsh Hadamard codes corresponding to users in a wireless cell (Minn: col. 4, line 3-60).

Art Unit: 2665

25. Regarding claim 27, referring to claim 26, Applicant's admitted prior art in view of Minn discloses that the second code is a scrambling code corresponding to a wireless cell (Minn: col. 4, line 3-60).

26. Regarding claim 28, referring to claim 25, Applicant's admitted prior art in view of Minn discloses that a product of the plurality of orthogonal codes and the plurality of times the first code is repeated is equal to the predetermined length (Minn: col. 4, line 3-60).

27. Regarding claim 29, referring to claim 25, Applicant's admitted prior art in view of Minn does not expressly disclose that the set of orthogonal codes is sixteen, the plurality of times the first code is repeated is 256, and the predetermined length is 4096. Applicant's admitted prior art in view of Minn does disclose the use of orthogonal codes (Minn: col. 4, lines 3-60), that the first code is repeated (Minn: col. 4, lines 3-19), and that there is a predetermined length (Minn: col. 4, lines 3-19). It is generally considered to be within the ordinary skill in the art to adjust, vary, select, or optimize the numerical parameters or values of any system absent a showing of criticality in a particular recited value. The burden of showing criticality is on applicant. In re Mason, 87 F.2d 370, 32 USPQ 242 (CCPA 1937); Marconi Wireless Telegraph Co. v. U.S., 320 U.S. 1, 57 USPQ 471 (1943); In re Schneider, 148 F.2d 108, 65 USPQ 129 (CCPA 1945); In re Aller, 220 F.2d 454, 105 USPQ 233 (CCPA 1055); In re Saether, 492 F.2d 849, 181 USPQ 36 (CCPA 1974); In re Antonie, 559 F.2d 618, 195 USPQ 6 (CCPA 1977); In re Boesch, 617 F.2d 272, 205 USPQ 215 (CCPA 1980). Since Applicant's admitted prior art in view of Minn discloses the use of a set of orthogonal codes, that the first code is repeated, and the use of a predetermined length, it would have been obvious to one of ordinary skill in the art at the time of the invention to use number of orthogonal codes, including sixteen, to repeat the code any

Art Unit: 2665

number of times, including 256, and to have the predetermined length be any length, including 4096.

28. Claims 10-11, 13-15, 17-19, and 30-34 are rejected under 35 U.S.C. 103(a) as being unpatentable over Applicant's admitted prior art in view of Minn et al (USPN 6,088,347) in further view of Madhow et al (USPN 6,175,587).

29. Regarding claim 10, referring to claim 1, Applicant's admitted prior art in view of Minn does not expressly disclose operating a base station to process the transmitted preamble, comprising the steps of: receiving the transmitted preamble; de-interleaving bits from the spread code, to group corresponding bits from each of the repetitions of the symbol despreading the grouped bits to recover a symbol; correlating the recovered symbol to identify the selected orthogonal code; however, it is implicit that the base station is capable of recovering the signal. Madhow teaches, in a wireless system, operating a base station to process a transmitted signal, comprising the steps of: receiving the transmitted signal (col. 5, lines 26-33); de-interleaving bits from the spread code, to group corresponding bits from each of the repetitions of the symbol (Fig. 3 and col. 5, line 66-col. 6, line 6); despreading the grouped bits to recover a symbol (Fig. 3; col. 5, line 66-col. 6, line 6; and col. 7, lines 34-49); correlating the recovered symbol to identify the selected orthogonal code in order to recover the original signal (col. 7, lines 34-49). It would have been obvious to one of ordinary skill in the art at the time of the invention to recover the original signal by reversing the process taken to transmit the signal.

30. Regarding claims 11 and 30, incorporating arguments from claim 1, Applicant's admitted prior art in view of Minn does not expressly disclose operating a base station to recover a preamble code transmitted by a wireless unit, comprising the steps of: receiving a signal

Art Unit: 2665

corresponding to a preamble; arranging the signal into a bitstream; de-interleaving bits from the bitstream, to group corresponding bits from each of a plurality of repetitions of a symbol length, into a plurality of groups; despreading the bits of each of the plurality of groups to recover a plurality of symbol bits in a sequence, the sequence having a length corresponding of a length of the preamble code; and correlating the sequence to identify a code, the code corresponding to one of a set of orthogonal codes. Madhow teaches, in a wireless system, receiving a signal corresponding to a transmitted signal (col. 5, lines 26-33); arranging the signal into a bitstream (col. 5, lines 26-33); de-interleaving bits from the bitstream, to group corresponding bits from each of a plurality of repetitions of a symbol length, into a plurality of groups (Fig. 3 and col. 5, line 66-col. 6, line 6) where the bits corresponding to each Walsh code are grouped in order to allow processing for each Walsh code; despreading the bits of each of the plurality of groups to recover a plurality of symbol bits in a sequence, the sequence having a length corresponding of a length of the transmitted signal (Fig. 3; col. 5, line 66-col. 6, line 6; and col. 7, lines 34-49); and correlating the sequence to identify a code, the code corresponding to one of a set of orthogonal codes in order to recover the original signal (col. 7, lines 34-49). It would have been obvious to one of ordinary skill in the art at the time of the invention to recover the original signal by reversing the process taken to transmit the signal.

31. Regarding claim 13, referring to claim 11, Applicant's admitted prior art in view of Minn in further view of Madhow discloses responsive to the correlating step identifying a code, initiating a connection with a wireless unit that transmitted the preamble (Applicant: page 2, line 12-page 4, line 5 and Madhow: col. 7, lines 34-49).

32. Regarding claim 14, referring to claim 11, Applicant's admitted prior art in view of Minn in further view of Madhow discloses that the number of groups generated by the deinterleaving step corresponds to the length of the preamble code times a number of segments in the bitstream (Applicant: page 2, line 12-page 4, line 5 and Madhow: col. 7, lines 34-49) where the number of groups is the number of repetitions which corresponds to the length of the preamble code times the number of segments in the bitstream; that the despreading step recovers the plurality of symbol bits into a sequence having a length corresponding to the length of the preamble code times the number of segments (Applicant: page 2, line 12-page 4, line 5 and Madhow: col. 7, lines 34-49) where the despreading ideally recovers the original signal whose length corresponds to the length of the preamble code times the number of segments; and that the correlating step comprises: correlating each of the corresponding symbol bits from each of the plurality of segments to identify the code (Applicant: page 2, line 12-page 4, line 5 and Madhow: col. 7, lines 34-49).

33. Regarding claim 15, referring to claim 14, Applicant's admitted prior art in view of Minn in further view of Madhow discloses that the correlating step comprises summing the power of the corresponding symbol bits from each of the plurality of segments (Madhow: col. 7, lines 43-49).

34. Regarding claims 17-19, referring to claim 14, Applicant's admitted prior art in view of Minn in further view of Madhow does not expressly disclose that the number of segments is four, eight, or two, with each segment having sixty-four symbols, thirty-two symbols, or one hundred twenty eight symbols, respectively; however, Applicant's admitted prior art in view of Minn in further view of Madhow discloses a segment in the bitstream, since "a segment" can

Art Unit: 2665

include any number of segments including 1 (Applicant: page 2, line 12-page 4, line 5 and Madhow: col. 7, lines 34-49). It is generally considered to be within the ordinary skill in the art to adjust, vary, select, or optimize the numerical parameters or values of any system absent a showing of criticality in a particular recited value. The burden of showing criticality is on applicant. In re Mason, 87 F.2d 370, 32 USPQ 242 (CCPA 1937); Marconi Wireless Telegraph Co. v. U.S., 320 U.S. 1, 57 USPQ 471 (1943); In re Schneider, 148 F.2d 108, 65 USPQ 129 (CCPA 1945); In re Aller, 220 F.2d 454, 105 USPQ 233 (CCPA 1055); In re Saether, 492 F.2d 849, 181 USPQ 36 (CCPA 1974); In re Antonie, 559 F.2d 618, 195 USPQ 6 (CCPA 1977); In re Boesch, 617 F.2d 272, 205 USPQ 215 (CCPA 1980). Since Applicant's admitted prior art in view of Minn in further view of Madhow discloses at least one segment, any number of segments and its corresponding number of symbols, would have been obvious at the time of the invention, including four or eight, with each segment having sixty-four symbols or thirty-two symbols, respectively.

35. Regarding claim 31, referring to claim 30, Applicant's admitted prior art in view of Minn in further view of Madhow discloses that a product of the first and second numbers is equal to the predetermined length (Minn: col. 4, line 3-60).

36. Regarding claim 32, referring to claim 31, Applicant's admitted prior art in view of Minn in further view of Madhow does not expressly disclose that the first number is 256, the second number is 16 and the predetermined length is 4096. Applicant's admitted prior art in view of Minn in further view of Madhow does disclose the use of orthogonal codes (Minn: col. 4, lines 3-60), that the first code is repeated (Minn: col. 4, lines 3-19), and that there is a predetermined length (Minn: col. 4, lines 3-19). It is generally considered to be within the ordinary skill in the

Art Unit: 2665

art to adjust, vary, select, or optimize the numerical parameters or values of any system absent a showing of criticality in a particular recited value. The burden of showing criticality is on applicant. In re Mason, 87 F.2d 370, 32 USPQ 242 (CCPA 1937); Marconi Wireless Telegraph Co. v. U.S., 320 U.S. 1, 57 USPQ 471 (1943); In re Schneider, 148 F.2d 108, 65 USPQ 129 (CCPA 1945); In re Aller, 220 F.2d 454, 105 USPQ 233 (CCPA 1055); In re Saether, 492 F.2d 849, 181 USPQ 36 (CCPA 1974); In re Antonie, 559 F.2d 618, 195 USPQ 6 (CCPA 1977); In re Boesch, 617 F.2d 272, 205 USPQ 215 (CCPA 1980). Since Applicant's admitted prior art in view of Minn discloses the use of a set of orthogonal codes, that the first code is repeated, and the use of a predetermined length, it would have been obvious to one of ordinary skill in the art at the time of the invention to have the first number be any number, including 256, to have the second number to be any number, including 16, and to have the predetermined length to be any length, including 4096.

37. Regarding claim 33, referring to claim 30, Applicant's admitted prior art in view of Minn in further view of Madhow discloses that the plurality of codes are Walsh Hadamard codes (Minn: col. 4, line 3-60).

38. Regarding claim 34, referring to claim 30, Applicant's admitted prior art in view of Minn in further view of Madhow discloses producing a signal corresponding to a match between the second number of output signals and one of the plurality of codes (Madhow: col. 7, lines 34-49).

39. Claims 12, 23, and 24 are rejected under 35 U.S.C. 103(a) as being unpatentable over Applicant's admitted prior art in view of Minn et al (USPN 6,088,347) in further view of Madhow et al (USPN 6,175,587) in further view of Bottomley (USPN 5,237,586).

Art Unit: 2665

40. Regarding claims 12 and 23, referring to claim 11, Applicant's admitted prior art in view of Minn in further view of Madhow does not expressly disclose that the de-interleaving step comprises: applying the bitstream into a sequence of tapped delay lines; and grouping corresponding taps from each of the tapped delay lines. Bottomley teaches, in a wireless communication system, using tapped delay lines to be able to search for a signal that has an arrival time delay (col. 4, lines 5-18). It would have been obvious to one of ordinary skill in the art at the time of the invention to use tapped delay lines in order to search for a signal that has an arrival time delay.

41. Regarding claim 24, referring to claim 23, Applicant's admitted prior art in view of Minn in further view of Madhow in further view of Bottomley discloses that the plurality of orthogonal codes corresponds to a set of Walsh Hadamard codes (Minn: col. 4, line 3-60).

42. Claim 16 is rejected under 35 U.S.C. 103(a) as being unpatentable over Applicant's admitted prior art in view of Minn et al (USPN 6,088,347) in further view of Madhow et al (USPN 6,175,587), as applied to claim 14 above, and further in view of Yoon et al (USPN 5,790,537).

43. Regarding claim 16, referring to claim 14, Applicant's admitted prior art in view of Minn in further view of Madhow does not expressly disclose that the correlating step comprises deriving a difference value of the corresponding symbol bits from each of the plurality of segments. Yoon teaches, in a wireless communication system, deriving a difference value of the corresponding symbol bits from each of the plurality of segments as a way to perform correlation (col. 14, lines 60-66). It would have been obvious to one of ordinary skill in the art at the time of

the invention to derive a difference value of the corresponding symbol bits from each of the plurality of segments as a way to perform correlation.

Conclusion

44. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within **TWO MONTHS** of the mailing date of this final action and the advisory action is not mailed until after the end of the **THREE-MONTH** shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than **SIX MONTHS** from the date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Daniel J. Ryman whose telephone number is (703)305-6970. The examiner can normally be reached on Mon.-Fri. 7:00-5:00 with every other Friday off.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Huy Vu can be reached on (703)308-6602. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Daniel J. Ryman
Examiner
Art Unit 2665

DR
Daniel J. Ryman



HUY D. VU
SUPERVISORY PATENT EXAMINER
TECHNOLOGY CENTER 2600